

# Marine Physical Laboratory

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## Comparison of VLA Ambient Noise Observations with ANDES Predictions

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Principal Investigator: William S. Hodgkiss

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# **Comparison of VLA Ambient Noise Observations with ANDES Predictions**

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## **Introduction**

The objective of this work was to perform a comparison of ambient noise observations from the July 1989 large aperture vertical line array (VLA) experiment and predictions from the ANDES (Ambient Noise Directionality Estimation System) model.

## **Accomplishments**

There were two main thrusts to this work: (1) porting ANDES to a Sun workstation and (2) ambient noise predictions.

ANDES was ported successfully to a Sun workstation where it then was used to make ambient noise predictions. A few issues needed to be resolved in moving the code from a DEC VMS operating system. These issues were discussed with SAIC as well as ARL/UT and SI.

ANDES then was used to make ambient noise predictions at the NE Pacific site of the July 1989 large aperture vertical line array experiment. Omni-directional levels, horizontal directionality, vertical directionality, and simultaneous horizontal-vertical directionality predictions were made. These predictions were compared to observed ambient noise omni-directional levels and vertical directionality as computed by a FFT beamformer. A noticeable difference between the ANDES predictions and the ambient noise observations is in the low angle-of-arrival region of the vertical directionality characteristics. ANDES predicts a dip or hole in the energy arriving near the horizontal which is not observed in the actual data.